U.S. Department of Transportation
Research and Special Programs Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

IAEA CERTIFICATE OF COMPETENT AUTHORITY
SPECIAL FORM RADIOACTIVE MATERIALS
CERTIFICATE NUMBER USA/0158/S, REVISION 4

This certifies that the source described has been demonstrated to meet the regulatory requirements for special form radioactive material as prescribed in the regulations of the International Atomic Energy Agency[1] and the United States of America[2] for the transport of radioactive materials.

1. Source Identification - E.I. DuPont/NEN Model NER-479C

2. Source Description - The low energy photon emitting source described by this certificate is a circular disc manufactured of 316L stainless steel and sealed by heli-arc weld. The dimensions range from 15 mm (0.6") to 38 mm (1.5") in diameter by 6 mm (0.2") to 13 mm (0.5") thick. The active face (the side opposite the welds) of this source has a wall thickness of approximately 0.25mm (0.10"). All sources shall be manufactured in accordance with NEN drawing no. 313-306 (attached).

3. Radioactive Contents - These sources consist of not more than 0.074 TBq (2.0 Ci) of Americium-241 as a ceramic.

4. Quality Assurance - Records of Quality Assurance activities required by Paragraph 209 of the IAEA regulations[1] shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors and consignees in the United States exporting or importing shipments under this certificate shall satisfy the requirements of Subpart H of 10 CFR 71.

5. Expiration Date - This certificate expires June 30, 2003.

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1 "Safety Series No. 6, Regulations for the Safe Transport of Radioactive Materials, 1985 Edition, as amended 1990" , published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

2 Title 49, Code of Federal Regulations, Parts 100 - 199, United States of America.

CERTIFICATE USA/0158/S, REVISION 4

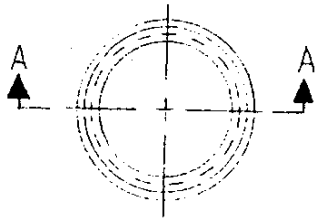
This certificate is issued in accordance with paragraph 703 of the IAEA Regulations and Section 173.476 of Title 49 of the Code of Federal Regulations, in response to the petition and information dated November 22, 1997 submitted by Du Pont Merck Pharmaceutical Company, North Billerica, MA, and in consideration of other information on file in this Office.

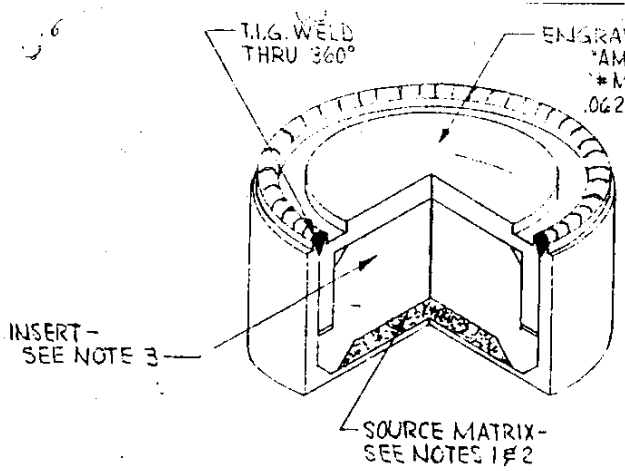
Certified by:

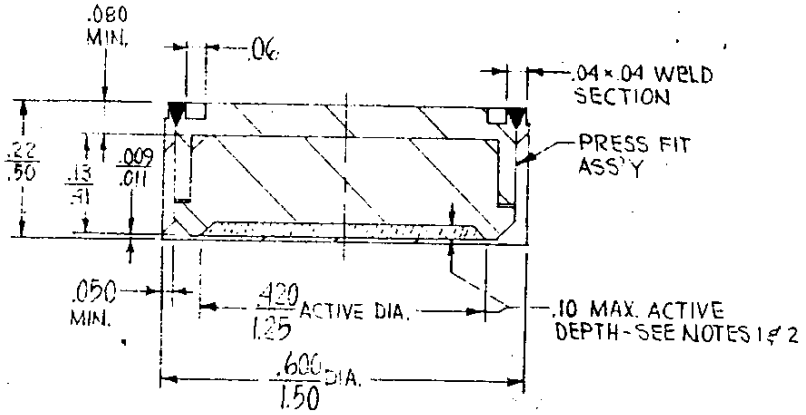
AUG 10 1998

Alan I. Roberts (DATE)
Associate Administrator for Hazardous Materials Safety

Revision 4 - Issued to update to the 1985 IAEA regulations and to extend the expiration date.







SECTION A-A

NOTES

1. SOURCE MATRIX CONSISTS OF AM-241 AS A VITREOUS CERAMIC FUSED TO THE INSERT FORMING A CERAMIC GLAZE.
2. MAXIMUM ACTIVITY CONTENT SHALL BE 2000 MCI MAXIMUM ACTIVITY CONCENTRATION SHALL BE 1.25 CI/CM² ACTIVE AREA. ACTIVE DIA: ACTIVE HGT. RATIO TO BE 5:1 MIN.
3. INSERT TO WHICH THE SOURCE MATRIX IS FUSED, SHALL BE CRES 316L STN. STL. OR AN ALUMINO-SILICATE MACHINABLE CERAMIC (MELTING POINT ~1200°C AFTER FIRING AND SUBSEQUENT COOLING).
4. LEAK TEST PER ANSI N542-1977 PROCEDURES A2.1.1 SMEAR TEST, A2.1.3 IMMERSION TEST, AND A2.2.1 BUBBLE TEST. SEE NSQA TEST DIRECTIVE 609. LIMIT 1×10^{-3} μCi
5. ANSI N542-1977 PERFORMANCE CLASSIFICATION C6-4444
6. D.O.T. "SPECIAL FORM" MATERIAL PER 10CFR71.4.

NEN CONTROL SPECIFICATION

MATERIAL SPECIFICATIONS		FRACTIONAL	DECIMAL	ANGULAR	NEW ENGLAND NUCLEAR CORP. BOSTON, MASS.
CRES 316L STN.STL.		± 1/64	±XX±.010 ±XXX±.005	± 30'	
DRAWN	J. SUMARES	REV.	DATE 9-11-78	SCALE N.T.S.	NAME NER-479C AM-241 L.E. PHOTON SOURCE
CHECKED			DO NOT SCALE DRAWING		DRAWING NO. 313-306
APPR'D					